AstroBiology Explorer (ABE): An Infrared Space Telescope

Selected for a MIDEX Feasibility Study

ABE would follow the Earth in orbit around the Sun to observe organic matter and other objects in space

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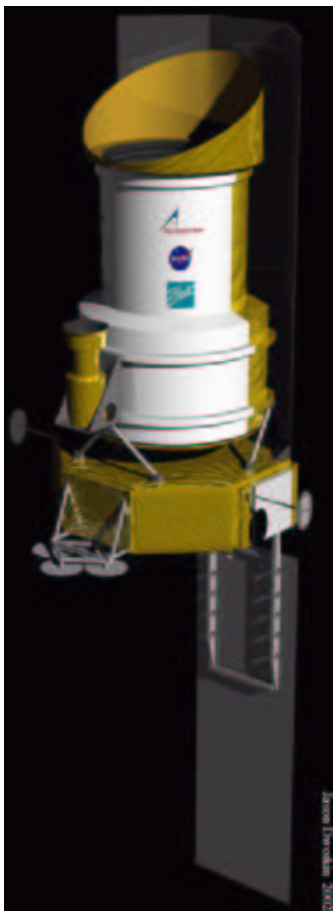
Main Press Release Publications Science Team Fact Sheet

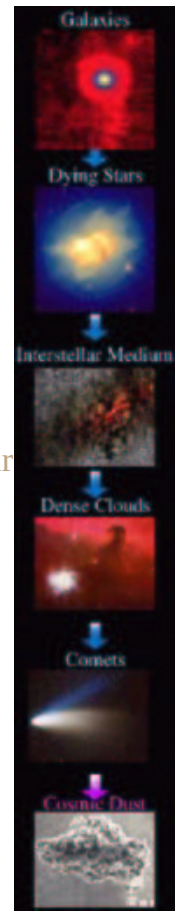


Scientific Goals

The Astrobiology Explorer (ABE) would address outstanding problems in Astrobiology, Astrochemistry, and Astrophysics by making fundamental scientific progress in the following areas:

- The entire evolutionary sequence of organics in the interstellar medium from stellar outflows, through the interstellar medium, and into forming planetary systems.
- The composition of Solar System objects ranging from dust to asteroids and comets to planets and their satellites.
- The evolution of prebiotic material in galaxies as a function of morphological type, luminosity class, metallicity, stage of interaction, activity type, and age.
- The distribution of deuterium across the entire evolutionary sequence as a tracer of the connections between interstellar and planetary materials.

By observing the chemical signatures in infrared spectra.



Mission Summary

Orbit	Earth-driftaway
Telescope Diameter	60 cm
Telescope Temperature	< 10 K
Cryogen	Solid hydrogen
Mission Lifetime	1.5 years
Slit dimensions	8.3 arcsec x 100 arcsec
Pointing Stability	1.1 arcsec, 3 sigma
Wavelength Range	2.5-5, 5-10, 10-20 µm
Spectral Resolution	2500-3500